UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

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NORIAKI MIYAMOTO ET AL.	
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APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents
Box Patent Application
Washington, DC 20231

1. [X] Fee Transmittal Form
(Submit an original, and a duplicate for fee processing)

2. [X] Specification — *Total Pages* 34

3. [X] Drawing(s) *(35 USC 113)* — *Total Sheets* 9

4. [X] Oath or Declaration — *Total Pages* 2

   a. [X] Newly executed (original or copy)
   b. [ ] Unexecuted for information purposes
   c. [ ] Copy from a prior application (37 CFR 1.63(d))
   (for continuation/divisional with Box 17 completed)
   [Note Box 5 below]
   i. [ ] DELETION OF INVENTOR(S)
   Signed Statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).

[ ] Incorporation By Reference *(useable if Box 4c is checked)*
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4c, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

6. [ ] Microfiche Computer Program *(Appendix)*

7. Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)
   a. [ ] Computer Readable Copy
   b. [ ] Paper Copy (identical to computer copy)
   c. [ ] Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. [X] Assignment Papers (cover sheet & document(s))

9. [ ] 37 CFR 3.73(b) Statement *(when there is an assignee)* [ ] Power of Attorney

10. [ ] English Translation Document *(if applicable)*

11. [ ] Information Disclosure Statement (IDS)/PTO-1449 [ ] Copies of IDS Citations

12. [ ] Preliminary Amendment

13. [X] Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)

14. [ ] Small Entity Statement(s) [ ] Statement filed in prior application Status still proper and desired

15. [ ] Certified Copy of Priority Document(s)
(if foreign priority is claimed)

16. [ ] Other: _____

17. If a CONTINUING APPLICATION, *check appropriate box and supply the requisite information:*
[ ] *Continuation* [ ] Divisional [ ] Continuation-in-part (CIP) of prior application No. __/_____

18. CORRESPONDENCE ADDRESS

[X] Customer Number or Bar Code Label — 05514 (Insert Customer No. or Attach bar code label here) — or [ ] Correspondence address below

NAME					
Address					
City		State		Zip Code	
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CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
	TOTAL CLAIMS (37 CFR 1.16(c))	48-20 =	28	X $ 18.00 =	$504.00
	INDEPENDENT CLAIMS (37 CFR 1.16(b))	9-3 =	6	X $ 78.00 =	$468.00
	MULTIPLE DEPENDENT CLAIMS (if applicable) (37 CFR 1.16(d))			$260.00 =	$0
				BASIC FEE (37 CFR 1.16(a))	$690.00
			Total of above Calculations =		$1662.00
	Reduction by 50% for filing by small entity (Note 37 CFR 1.9, 1.27, 1.28).				0
				TOTAL =	$1662.00

19. Small entity status

a. ☐ A Small entity statement is enclosed

b. ☐ A small entity statement was filed in the prior nonprovisional application and such status is still proper and desired.

c. ☐ Is no longer claimed.

20. ☒ A check in the amount of $ 1662.00 to cover the filing fee is enclosed.

21. ☒ A check in the amount of $ 40.00 to cover the recordal fee is enclosed.

22. The Commissioner is hereby authorized to credit overpayments or charge the following fees to Deposit Account No. 06-1205:

a. ☒ Fees required under 37 CFR 1.16.

b. ☒ Fees required under 37 CFR 1.17.

c. ☐ Fees required under 37 CFR 1.18.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED	
NAME	Jack M. Arnold
SIGNATURE	Jack M. Arnold Reg. No. 25,823
DATE	February 25, 2000

NY_MAIN 63844 v 1

TITLE OF THE INVENTION

METHOD AND APPARATUS FOR PROCESSING AN IMAGE, AND STORAGE MEDIUM

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a method, apparatus, and storage medium for processing an image, capable of performing a desired editing process on an image.

The present invention also relates to a method, apparatus, and storage medium which allow an editing process to be designated in an easy fashion.

The present invention also relates to a method, apparatus, and storage medium which allow desired image information to be selected from a plurality of image information and laid out.

Description of the Related Art

In conventional techniques, an editing process performed on a selected image is recorded together with the image information, and it is impossible to record the editing process separately from the image information.

When an image is selected from a plurality of images, a selection condition has to be designated each time an image is selected.

In the conventional techniques, when an image such as that

photographed by a user is pasted in a particular part of a template prepared in advance such as a Christmas card or a New Year card, and an editing process such as enlargement, reduction, movement, rotation is performed upon the image, data representing the editing process is stored in such a manner that the data is linked with that image. Therefore, when another different image is pasted in the same template, it is required to again designate the editing process for the image.

That is, when the same editing process is performed on a plurality of images, it is required to designate the editing process as many times as there are images. This is very troublesome for a user.

Furthermore, in the conventional techniques, when a plurality of images are selected under the same selection condition, it is required to input the same selection condition for each image. This is also troublesome for a user.

SUMMARY OF THE INVENTION

According to an aspect of the present invention, to solve the above problems, there is provided a method of processing an image, comprising the steps of: specifying a plurality of editing processes to be performed on an image; registering said plurality of specified editing processes as one set of editing processes; and identifying a set of editing processes thereby determining a plurality of editing processes to be performed on an image.

Preferably, in this method according to the present invention, an identifier indicating the one set of editing processes is registered, and the method further comprises the steps of displaying a plurality of registered identifiers in the form of a list; and calling a set of editing processes corresponding to an identifier selected from the list of the plurality of registered identifiers.

Preferably, the plurality of specified editing processes are registered as layout information.

The plurality of editing processes may include image rotation.

The plurality of editing processes may include image enlargement.

The plurality of editing processes may include image reduction.

The plurality of editing processes may include image brightness adjustment.

The plurality of editing processes may include image contrast adjustment.

The plurality of editing processes may include designation of an image aspect ratio.

The plurality of identified editing processes may be performed upon newly input image information.

According to another aspect of the present invention, there is provided a method of processing an image, comprising the steps

of: identifying an editing process performed on an image; assigning an identifier to the identified editing process and registering the identifier assigned to the editing process; and calling the editing process indicated by a specified identifier, and performing the editing process upon another image which is different from the previous image.

Preferably, in this method according to the present invention, when the editing process is registered, the image upon which the editing process has been performed is not registered.

The image may be an image input by means of scanning using a scanner.

The image may be an image photographed using a digital camera.

The image may be an image stored on a storage medium.

The image may be an image input by means of scanning using a film scanner.

According to another aspect of the present invention, there is provided a method of processing an image, comprising the steps of: designating a selection condition from a plurality of image information selection conditions which have been registered in advance; detecting image information which meets the designated selection condition from plural pieces of image information and calling the detected image information; and outputting the called image information.

In this method according to the present invention, said

selection condition is preferably a condition based on the order of storing the plural pieces of information.

The selection condition may be magnetic information stored in such a manner that image information is linked to the corresponding image information.

The method may further include the steps of: displaying, in the form of a list, names representing the selection conditions together with names representing plural pieces of layout information which have been registered in advance; and performing, upon an image, a process corresponding to a name selected from the list of names.

Other features and advantages of the present invention will be apparent from the following description taken in conjunction with the accompanying drawings, in which like reference characters designate the same or similar parts throughout the figures thereof.

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BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate embodiments of the invention and, together with the description, serve to explain the principles of the invention.

Fig. 1 is a block diagram illustrating the construction of an image processing apparatus according to the present invention;

Fig. 2 is a flow chart illustrating a layout registration process;

Fig. 3 is a flow chart illustrating a layout calling process;

Fig. 4 illustrates an example of a main screen image;

Fig. 5 illustrates an example of a main screen image used to perform a printer setting;

Fig. 6 illustrates an example of a main screen image in which an image selection condition is designated;

Fig. 7 illustrates an example of an editing screen image;

Fig. 8 illustrates an example of a registration screen image;

Fig. 9 illustrates an example of a magnetic information list; and

Fig. 10 illustrates an example of an image-associated information list.

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DESCRIPTION OF THE PREFERRED EMBODIMENT

Fig. 1 is a block diagram illustrating the construction of an image processing apparatus according to the present invention. In Fig. 1, an image inputting device 1 is, for example, a scanner and serves as image inputting means for optically scanning and inputting an image of a document. Instead of the scanner, a removable recording medium such as a CD-ROM or an MO capable of recording image data which can be input to the image

processing apparatus may also be employed as the image inputting device 1. Alternatively, the image inputting device 1 may be a communication interface for downloading image data from a terminal connected via a communication line. Images in various forms may be input to the image processing device 1. For example, an image recorded on a recording medium such as paper may be optically scanned and input. An image formed on a film may be input using a film scanner serving as the image inputting device 1. An image in the form of a digital image taken via a digital camera or the like may also be input.

An image display device 2, including a memory (ROM) 3, a memory (RAM) 4, a microprocessor 5, and a display screen 6, serves as image display means for displaying image data input via the image inputting device 1. The memory 4 serves to store image data input via the image inputting device 1. The memory 4 also serves as a work memory for storing data produced during a process. The memory 4 is also used to store registered data according to the present invention. A control program for executing a process which will be described later with reference to a flow chart may be stored in either the memory 3 or the memory 4. In the case where the control program is installed from a removable storage medium (such as a CD-ROM, FD, and MO, not shown in Fig. 1) or downloaded from another terminal connected via a communication line, the control program is stored in the memory 4. The process according to the present invention is executed under the control

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of the microprocessor 5 in accordance with the control program stored in the memory 3 or 4. The display screen 6 is realized by a CRT or a liquid crystal display. The display screen 6 is used to display various screen images thereby allowing a user to edit and register image data and associated data. A cursor 8 is displayed on the display screen 6 so that a desired coordinate on the display screen 6 can be designated by moving the cursor to a desired point on the display screen 6.

As for the inputting means 7 for inputting various data, a keyboard or the like for inputting characters and functions or coordinate inputting means such as a mouse or a tablet may be employed. The printer 9 serves as outputting means for outputting data such as image data, graphic data, and strings produced on the display screen 6. Specific examples of the printer 9 include an LBP and an ink-jet printer. When an editing process such as movement, rotation, enlargement, or reduction is performed upon an image which is displayed on the display screen 6 after being input via the image inputting device 1, a specific editing command is input via the inputting means 7, and an editing process corresponding to the editing command is executed by the microprocessor 5. The resultant edited image is then output via the printer 9.

The present invention is not limited to a system which includes all parts shown in Fig. 1, but the invention may also be applied to a system in which some parts such as the image

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inputting device 1 or the printer 9 are connected to other parts such as the image display device 2 or the inputting means 7 via a network.

Fig. 4 illustrates a main screen image used to designate a process according to the present invention, wherein the main screen image is displayed in the form of a window on the display screen 6. Images input via the image inputting means 1 are displayed in this main screen image, and a desired image can be selected from the images displayed. The operation of inputting an image via the image inputting means 1 is started when an INPUT IMAGE button 14 is clicked. When the INPUT IMAGE button 14 is clicked once, the image inputting means 1 performs an image inputting operation once. In the case where there are a plurality of images to be input, the plurality of images can be input only by clicking the INPUT IMAGE button 14 once. The input image(s) is (are) displayed on the main screen. It is possible to determine which one of a plurality of buttons displayed on the display screen is clicked, by comparing the coordinates of a point which is designated via the inputting means 7 (by clicking a mouse button or by tapping a tablet with a pen) with coordinate information (stored in the memory 4) representing the areas of the respective buttons. This technique is also used to determine which one of buttons is clicked in other screen images which will be described later. Instead of clicking a button displayed on the screen, a command corresponding to the button may be input

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via the keyboard or the like.

On the main screen, if a PRINT button 15 is clicked, a currently selected image is printed via the printer 9. Herein, the selected image refers to an image selected from a plurality of images which are displayed in the form of thumbnail images (reduced-size images) after being input via the image inputting means 1 wherein selection may be performed by clicking a desired thumbnail image 12 itself or a check box 13 of the desired thumbnail image 12, using the inputting means. If a particular thumbnail image 12 is selected, a selection mark is displayed in the check box 13 to indicate that the image is selected. In the example shown in Fig. 6, a mark {✓} is displayed in check boxes 13 of selected images so that the selected images can be discriminated from non-selected images. In the image selection operation, the selected state and the non-selected state are alternately switched each time a thumbnail image 12 or a check box 13 is clicked, and the status of the image is stored in the memory 4. The selected image is displayed in a print image preview window 11. Herein, only an image to be printed on one sheet of paper is displayed in the pint image preview window. If a preview page designation button 16 is clicked, the preview image is switched to a previous or following image. Numeric values are displayed at a side of the preview page designation button 16 to indicate the total number of pages on which selected images are to be printed and indicate which page is currently

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displayed in the print image preview window 11. In the specific example shown in Fig. 4, the numeric values indicate that there are four pages in total and the first page is currently displayed in the print image preview window 11. Note that no image is selected and thus no image is displayed in the print image preview window 11 in the specific example shown in Fig. 4.

In a printing condition setting box 10, a layout selected from a plurality of layouts registered in advance in the memory 4 is displayed. If an inverted triangle button in the printing condition setting box 10 is clicked via the inputting means 7, names of layouts which can be selected in the printing condition setting box 10 are read from the memory 4 and displayed in the form of a pull-down menu. An example of the pull-down menu is shown in Fig. 5. In this specific example, the names of nine selectable layouts are displayed. If a desired layout name is selected from the pull-down menu, layout information corresponding to the selected layout name is read from the memory 4, and setting of the selected image is performed in accordance with the layout information. The print image preview window 11 displays images to be laid on one sheet of paper. However, when no image is selected yet, the print image preview window 11 displays, as shown in Fig. 4, only an image layout frame corresponding to the layout name displayed in the printing condition setting box 10, in accordance with layout information. In the specific example shown in Fig. 6, the selected layout

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includes one image to be printed on one sheet. Each time a layout is selected in the printing condition setting box 10, the frame displayed in the print image preview window 11 is updated.

When an image is selected, the selected image is displayed in the print image preview window 11 in accordance with a layout corresponding to a layout name displayed in the printing condition setting box 10. That is, the selected image is displayed within the frame which is displayed when no image is selected.

An image may also be selected as follows. A mouse button is pressed when a desired thumbnail image is pointed to by a cursor. The cursor is then moved into the print image preview window 11 while maintaining the mouse button in the pressed state. After that, if the mouse button is released, the image, which was pointed to by the cursor when the mouse button was pressed, is displayed in the print image preview window 11. Fig. 6 illustrates an example of the print image preview window 11 in which an image selected by the above-described image selection operation is displayed.

Instead of selecting an image from those displayed in the form of thumbnail images, an image may also be selected by designating, via the printing condition setting box 10, a layout name including an image selection condition. In the example in Fig. 6, a layout including an image selection condition "first four shots" is selected in the printing condition setting box

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10, and, as a result, first four shots of images are selected from the thumbnail images 12 wherein the selection mark is displayed in the check box of each thumbnail image selected.

In a specific case where an image is selected in the printing condition setting box 10 by selecting a layout including magnetic information "APS panorama" as the image selection condition from the pull-down menu shown in Fig. 5, magnetic information is examined for all thumbnail images displayed, and images which meet the designated selection condition (images photographed in the form of APS panorama, in this example) are selected. Magnetic information is stored together with image data into the memory 4 when an image is input via the image inputting means 1.

A description is now given as to the process of registering a desired layout so that the registered layout will be displayed in the pull-down menu of the printing condition setting window 10 such as that shown in Fig. 5. In this layout registration process, a user inputs information via the inputting means 7, and the input information is stored in the memory 4. Fig. 2 is a flow chart illustrating the layout registration process.

A layout to be registered is designated as follows. First, the edit screen (Fig. 7) for editing an image is displayed by clicking the EDIT button 17 on the main screen. In the next step of the layout registration, a paper type is selected, and then an image frame is laid and edited on the edit screen shown in

Fig. 7. Then on the registration screen shown in Fig. 8, an image selection condition and a layout name are set and registered.

In Fig. 7, a desired paper size (A4, B5, etc.) and a paper direction (vertical or horizontal direction) are designated using a paper type selection box 32. In the paper type selection box 32, information in terms of combinations of available paper sizes and paper directions is read from the memory 4 and displayed in the form of a pull-down menu so that a user can select a paper size and a paper direction from the pull-down menu using the inputting means 7. If a paper type is selected in the paper type selection box 32, a frame representing the selected paper size and direction is displayed in a print preview window 31. Then an image is laid and edited within the paper frame displayed in the print preview window 31.

More specifically, an image frame is laid in the paper frame and edited. The image frame may be laid by defining the image frame within the paper frame using the inputting means 7 such as a mouse. Still alternatively, an image frame may be laid using a layout which has already been registered. In this case, if a desired layout is selected using a layout selection box 33, then an image frame corresponding to the selected layout is displayed in the print preview window 31. The layout names displayed in the layout selection box 33 are the same as those which are stored in the memory 4 and displayed in the pull-down menu shown in Fig. 5. However, what can be here on the edit screen

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is to lay an image frame and edit it, but an associated image selection condition is set on another screen which will be described later. Therefore, layout names which include only image selection conditions may not be displayed in the layout selection box.

If a layout name is selected in the layout selection box 33, layout information corresponding to the selected layout name is read from the memory 4, and an image frame representing the selected layout is displayed in the print preview window 31. Thus, a user can now start editing the frame displayed.

Edition of the frame may be performed by designating one of various buttons displayed in the editing command window 34 via the inputting means 7. If an editing command button is selected, an editing process corresponding to the selected button is performed on the frame displayed in the print preview window 31. Information representing the type of the editing process performed is stored in the memory 4. In the case where the layout includes a plurality of images to be printed on one sheet of paper, images to be edited and editing processes performed upon the images may be designated by first selecting images to be edited and then designating the types of editing processes. More specifically, when the type of an editing process is input, an image which is in a selected state is detected, and data indicating the correspondence between the image in the selected state and the type of the editing process is stored in

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the memory 4. The types of available editing processes may include generation of an image frame, designation of the aspect ratio of an image, trimming of an image in a designated area, 90{degree} rotation of an image in a clockwise direction, 90{degree} rotation of an image in a counterclockwise direction, enlargement of an image by a factor selected from predetermined values represented in percent, reduction of an image by a factor selected from predetermined values represented in percent, mirror-image inversion; brightness adjustment, and contrast adjustment. The editing command window 34 may also include auxiliary editing commands such as an all selection command for selecting all images displayed in the print preview window 31, a cancel command for canceling an issued editing command, and an image deleting command for deleting a designated image in the print preview window 31.S

The print preview window 31 may be designed such that an edit process may be performed for an image frame, or such that an image, selected by designating a thumbnail image displayed in the thumbnail image window 35, may be displayed in the print preview window 31 thereby allowing a user to edit the image which is displayed in a more realistic fashion. Herein, the thumbnail images 36 displayed in the thumbnail image window 35 are the same as those which were displayed on the main screen when the EDIT button 17 was clicked.

If a detail setting button 30 is clicked after completion

of the editing process, the registration screen (Fig. 8) is displayed on the display screen 6 so that a user can register the layout (S1). The layout which has been edited and processed on the edit screen by the user is displayed in a layout preview window 43 in the layout registration screen so that the user can confirm that the correct layout is going to be registered (S2). At this stage, the registration screen may accept a command input via a printer setup list 19, a new layout name box 40, a magnetic information box 41, or an image-associated information box 42. An example of the magnetic information list displayed, in the form of a pull-down menu, in the magnetic information box 41 is shown in Fig. 9. Information associated with these commands in the list is stored in advance in the memory 4 so that, when an inverted triangular button of the magnetic information box 41 is clicked, information is read from the memory 4 and the pull-down menu is displayed. If a magnetic information command is selected from the list via the inputting means 7, the selected command is displayed in the magnetic information box 41.

An example of an image-associated information list displayed in the form of a pull-down menu in the image-associated information box 42 is shown in Fig. 10. Information associated with these commands in the list is stored in advance in the memory 4 so that, when an inverted triangular button of the image-associated information box 42 is clicked, information is read from the memory 4 and the pull-down menu is displayed. If

an image-associated information command is selected from the list via the inputting means 7, the selected command is displayed in the image-associated information box 42. Herein, the image-associated information refers to a selection condition specifying a condition under which an image is selected. For example, when "all images" is selected as the image-associated information, all images which have been input via the image inputting means 1 and which are currently displayed in the form of thumbnail images are selected, laid, and output. If "every second image" is selected as the image-associated information, every second image, that is, the first image, the third image, the fifth image and so on are selected from the images, which have been input via the image inputting means 1 and which are now displayed in the form of thumbnail images. The selected images are then laid and output.

If a RECORD button 44 is clicked (S4), the layout indicating the location of an image displayed in the layout preview window 43 and also indicating the associated edit process, the printing condition setting information displayed in the print condition setting list box 19, the picture size information displayed in the picture size box, the paper selection information displayed in the paper type selection box, the number-of-images information displayed in the number-of-images box, the magnetic information displayed in the magnetic information box 41, and the image-associated information displayed in the

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image-associated information box 42 are stored in the memory 4 together with the layout name displayed in the new layout name box 40 in such a manner that the above layout information is linked to the layout name (S5). Even in the case where layout information to be registered in the memory 4 is selected in the preview window displaying an image, only the type of an edit process and associated parameters (such as an enlargement ratio or a reduction ratio) are registered without registering the image itself. The layout name serves as an identifier which is used when the above-described information is called. The layout name may be defined by a string of characters or numerals input via a keyboard or a soft key. If the DELETE button 45 is clicked, information stored in the memory 4 via the registration screen (Fig. 8) in respective registration operations is entirely deleted, and the process returns to the edit screen (Fig. 7). When the CANCEL button is clicked, information which has been newly input via the registration screen (Fig. 8) and stored in the memory 4 is deleted, and the process returns to the edit screen (Fig. 7).

In the case where an existing layout is edited instead of registering a new layout, layout information corresponding to a designated layout name is called onto the edit screen (Fig. 7) and edited on the edit screen and the registration screen. If the OK button 46 is clicked after completion of the editing process, the layout information is updated to new layout

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information. In this case, the layout name of the layout called on the edit screen is displayed in the new layout name box 40. If, in this state, the OK button 46 is clicked, items of layout information stored in the memory 4 are updated to those which have been newly input or changed.

The process of calling an existing layout is described below with reference to the flow chart shown in Fig. 3. If a layout name is selected in the printing condition setting box 10 on the main screen (Fig. 6), the layout information corresponding to the layout name is read from the memory 4, and the frame representing the layout is displayed in the print preview window 11 (S21) so that a user can confirm that the correct layout has been called. In the case where the selected layout includes an image selection condition, an image is selected in accordance with the image selection condition. Conversely, if the selected layout does not include an image selection condition, an operation of selecting an image may be accepted (S22). If an image is selected by a user in step S23, the process goes to step S24. In step S24, the image selected in step S22 or S23 is displayed in the print preview window 11. Herein, when the selected image is displayed in the print preview window 11, the image is displayed in accordance with the layout which is read from the memory 4 in accordance with the selected layout name. If the PRINT button 15 is clicked (S25), print data is produced in accordance with the layout displayed in the print preview

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window 11 and printed via the printer 9.

As can be understood from the above description, the present embodiment has the following advantages. In an image printing application, when a user can edit an image in terms of the image frame layout, the size of the image, the inclination angle of the image, the location, the cut-out area, the mirror-image formation, and so on and register them in the form of a template. After that, the same layout can be called and another different image can be attached to the layout. This allows a user to perform a set of editing processes upon an image and to attach the edited image to a page, simply by selecting an image. Furthermore, it is not required to repeat an operation to specify the same edit process, and thus it becomes possible to perform the correct edit process without resulting in a miss operation.

Furthermore, a plurality of selection conditions based on magnetic information representing the data, time, exposure condition, focal length, the aspect ratio, etc., used for example in an APS film, or based on the order of recording image information are registered so that an image (images) can be easily selected simply by specifying a desired selection condition from the plurality of selection conditions.

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WHAT IS CLAIMED IS:

1. A method of processing an image, comprising the steps of:

specifying a plurality of editing processes to be performed on an image; and

registering said plurality of specified editing processes as one set of editing processes; and

identifying a set of editing processes thereby determining a plurality of editing processes to be performed on an image.

2. A method of processing an image, according to Claim 1, wherein an identifier indicating said one set of editing processes is registered, and wherein said method further comprises the steps of:

displaying a plurality of registered identifiers in the form of a list; and

calling a set of editing processes corresponding to an identifier selected from the list of said plurality of registered identifiers.

3. A method of processing an image, according to Claim 1, wherein said plurality of specified editing processes are registered as layout information.

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4. A method of processing an image, according to Claim 1, wherein said plurality of editing processes include image rotation.

5. A method of processing an image, according to Claim 1, wherein said plurality of editing processes include image enlargement.

6. A method of processing an image, according to Claim 1, wherein said plurality of editing processes include image reduction.

7. A method of processing an image, according to Claim 1, wherein said plurality of editing processes include image brightness adjustment.

8. A method of processing an image, according to Claim 1, wherein said plurality of editing processes include image contrast adjustment.

9. A method of processing an image, according to Claim 1, wherein said plurality of editing processes include designation of an image aspect ratio.

10. A method of processing an image, according to Claim

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1, wherein said plurality of identified editing processes are performed upon newly input image information.

11. A method of processing an image, comprising the steps of:

identifying an editing process performed on an image;

assigning an identifier to said identified editing process and registering said identifier assigned to the editing process; and

calling an editing process indicated by a specified identifier, and performing said editing process upon another image which is different from the previous image.

12. A method of processing an image, according to Claim 11, wherein when said editing process is registered, the image upon which said editing process has been performed is not registered.

13. A method of processing an image, according to Claim 11, wherein said image is an image input by means of scanning using a scanner.

14. A method of processing an image, according to Claim 11, wherein said image is an image photographed using a digital camera.

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15. A method of processing an image, according to Claim 11, wherein said image is an image stored on a storage medium.

16. A method of processing an image, according to Claim 11, wherein said image is an image input by means of scanning using a film scanner.

17. A method of processing an image, comprising the steps of:

designating a selection condition from a plurality of image information selection conditions which have been registered in advance;

detecting image information which meets said designated selection condition from plural pieces of image information and calling the detected image information; and

outputting the called image information.

18. A method of processing an image, according to Claim 17, wherein said selection condition is a condition based on the order of storing said plural pieces of information.

19. A method of processing an image, according to Claim 17, wherein said selection condition is magnetic information stored such that said magnetic information is linked to image

information.

20. A method of processing an image, according to Claim 17, further comprising the steps of:

displaying, in the form of a list, names representing said selection conditions together with names representing plural pieces of layout information which have been registered in advance; and

performing, upon an image, a process corresponding to a name selected from the list of names.

21. An image processing apparatus comprising:

specifying means for specifying a plurality of editing processes to be performed on an image;

registration means for registering said plurality of specified editing processes as one set of editing processes; and

determination means for determining a plurality of editing processes to be performed on an image, by identifying a set of editing processes.

22. An image processing apparatus according to Claim 21, wherein said registration means registers said one set of editing processes together with an identifier indicating said one set of editing process, and wherein said image processing apparatus further comprises:

list displaying means for displaying a plurality of registered identifiers in the form of a list; and

calling means for calling a set of editing processes corresponding to an identifier selected from the list of said plurality of registered identifiers.

23. An image processing apparatus according to Claim 21, wherein said registration means registers said plurality of specified editing processes as layout information.

24. An image processing apparatus according to Claim 21, wherein said plurality of editing processes include image rotation.

25. An image processing apparatus according to Claim 21, wherein said plurality of editing processes include image enlargement.

26. An image processing apparatus according to Claim 21, wherein said plurality of editing processes include image reduction.

27. An image processing apparatus according to Claim 21, wherein said plurality of editing processes include image brightness adjustment.

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28. An image processing apparatus according to Claim 21, wherein said plurality of editing processes include image contrast adjustment.

29. An image processing apparatus according to Claim 21, wherein said plurality of editing processes include designation of an image aspect ratio.

30. An image processing apparatus according to Claim 21, further comprising editing means for performing the plurality of editing processes identified by said identification means upon newly input image information.

31. An image processing apparatus comprising:

editing process identifying means for identifying an editing process performed on an image;

registration means for registering an editing processes identified by said editing process identifying means together with an identifier indicating said editing process; and

editing means for calling an editing process indicated by a specified identifier, and performing said editing process upon another image which is different from the previous image.

32. An image processing apparatus according to Claim 31,

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wherein when said registration means registers said editing process, said registration means does not register the image upon which said editing process has been performed.

33. An image processing apparatus according to Claim 31, further comprising a scanner for inputting said image by means of scanning.

34. An image processing apparatus according to Claim 31, wherein said image is an image photographed using a digital camera.

35. An image processing apparatus according to Claim 31, further comprising image inputting means for inputting said image from a storage medium.

36. An image processing apparatus according to Claim 31, further comprising a film scanner for inputting said image by means of scanning.

37. An image processing apparatus comprising:

designating means for designating a selection condition from a plurality of image information selection conditions which have been registered in advance;

image information calling means for detecting image

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information, which meets the selection condition designated by said designating means, from plural pieces of image information and calling the detected image information; and

outputting means for outputting the image information called by said image information calling means.

38. An image processing apparatus according to Claim 37, wherein said selection condition is a condition based on the order of storing said plural pieces of information.

39. An image processing apparatus according to Claim 37, wherein said selection condition is magnetic information stored such that said magnetic information is linked to image information.

40. An image processing apparatus according to Claim 37, further comprising:

list displaying control means for controlling the operation of displaying a list such that names representing said selection conditions are displayed in the form of list together with names representing plural pieces of layout information which have been registered in advance; and

control means for controlling a process such that a process corresponding to a name selected from the list of names is performed upon an image.

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41. A computer readable storage medium on which a program is stored, said program including:

a control program for specifying a plurality of editing processes to be performed on an image;

a control program for registering said plurality of specified editing processes as one set of editing processes; and

a control program for determining a plurality of editing processes to be performed on an image, by identifying a set of editing processes.

42. A storage medium according to Claim 41, wherein said program further includes:

a control program for registering said one set of editing processes together with an identifier identifying said one set of editing processes;

a control program for displaying a plurality of registered identifiers in the form of a list; and

a control program for calling a set of editing processes corresponding to an identifier selected from the list of said plurality of registered identifiers.

43. A storage medium according to Claim 41, wherein said program further includes a control program for registering said plurality of specified editing processes as layout information.

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44. A storage medium according to Claim 41, wherein said program further includes a control program for performing said plurality of determined editing processes upon newly input image information.

45. A computer readable storage medium on which a program is stored, said program including:

a control program for identifying an editing process performed on an image;

a control program for registering an identified editing processes together with an identifier indicating said editing process; and

a control program for calling said editing process indicated by a specified identifier, and performing said editing process upon another image which is different from the previous image.

46. A storage medium according to Claim 45, wherein said program further includes a control program for controlling registration of said editing process such that the image upon which said editing process has been performed is not registered.

47. A computer readable storage medium on which a program is stored, said program including:

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a control program for designating a selection condition from a plurality of image information selection conditions which have been registered in advance;

a control program for detecting image information, which meets the designated selection condition, from plural pieces of image information and calling the detected image information; and

a control program for outputting the called image information.

48. A storage medium according to Claim 47, wherein said program further includes:

a control program for controlling the operation of displaying a list such that names representing said selection conditions are displayed in the form of list together with names representing plural pieces of layout information which have been registered in advance; and

a control program for performing a process corresponding to a name selected from the list of names upon an image.

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ABSTRACT OF THE DISCLOSURE

An image processing method, an image processing apparatus, and a storage medium are disclosed which allow the same layout and editing process to be specified for different images in an easy fashion. An image processing method, an image processing apparatus, and a storage medium are also disclosed which allow a selection condition to be input in an easy fashion thereby selecting desired image information from plural pieces of image information. A layout name is assigned to a set of editing processes performed on an image or to an image selection condition and registered together. Information can be used again by specifying a particular layout name.

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FIG. 1

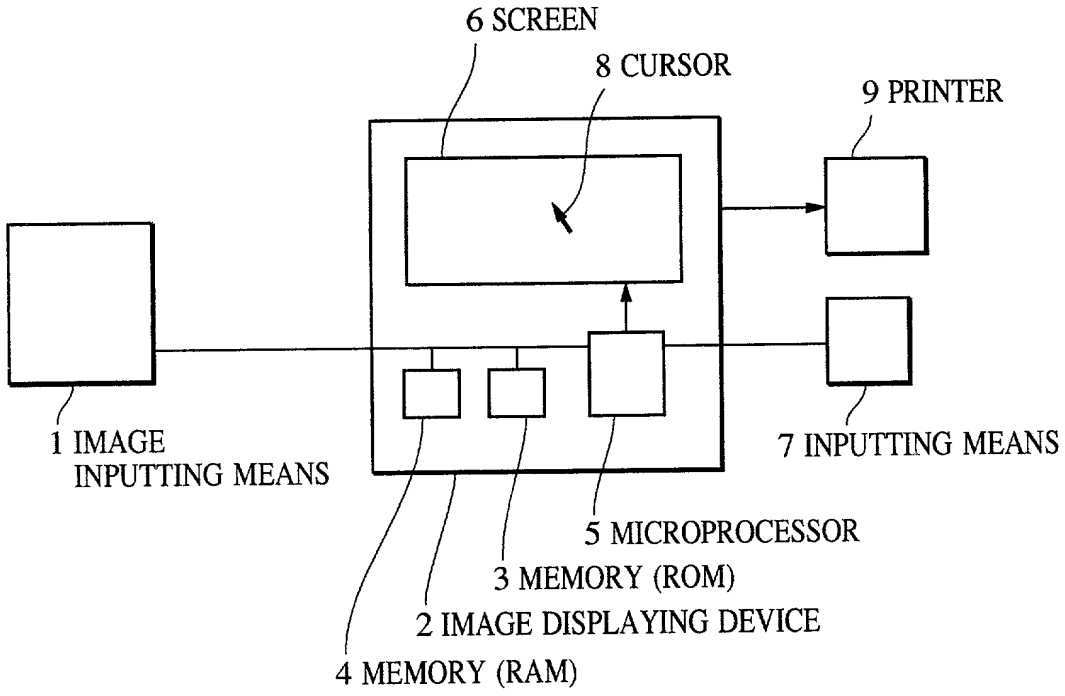

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FIG. 2

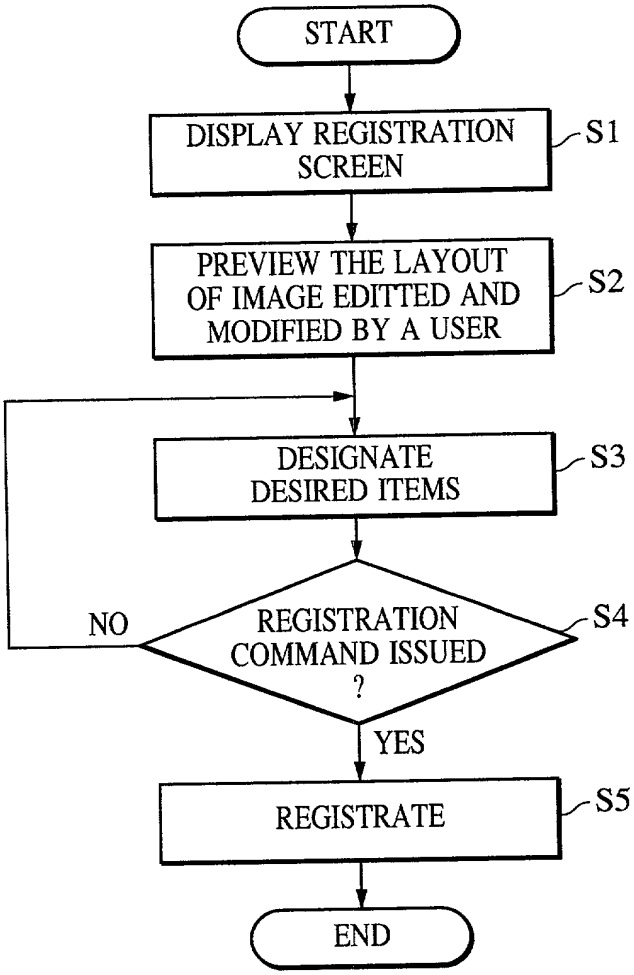

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FIG. 3

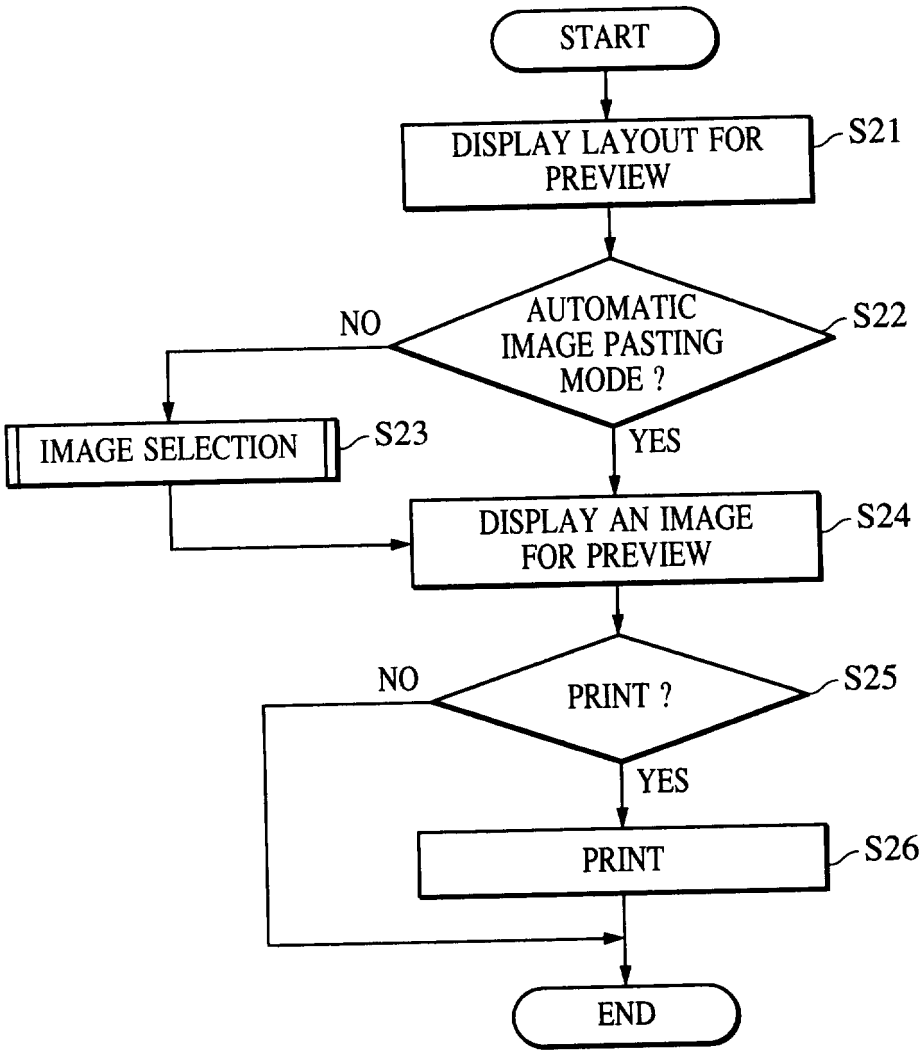
START
DISPLAY LAYOUT FOR PREVIEW
S21
AUTOMATIC IMAGE PASTING MODE ?
S22
NO
YES
IMAGE SELECTION
S23
DISPLAY AN IMAGE FOR PREVIEW
S24
PRINT ?
S25
NO
YES
PRINT
S26
END

FIG. 3

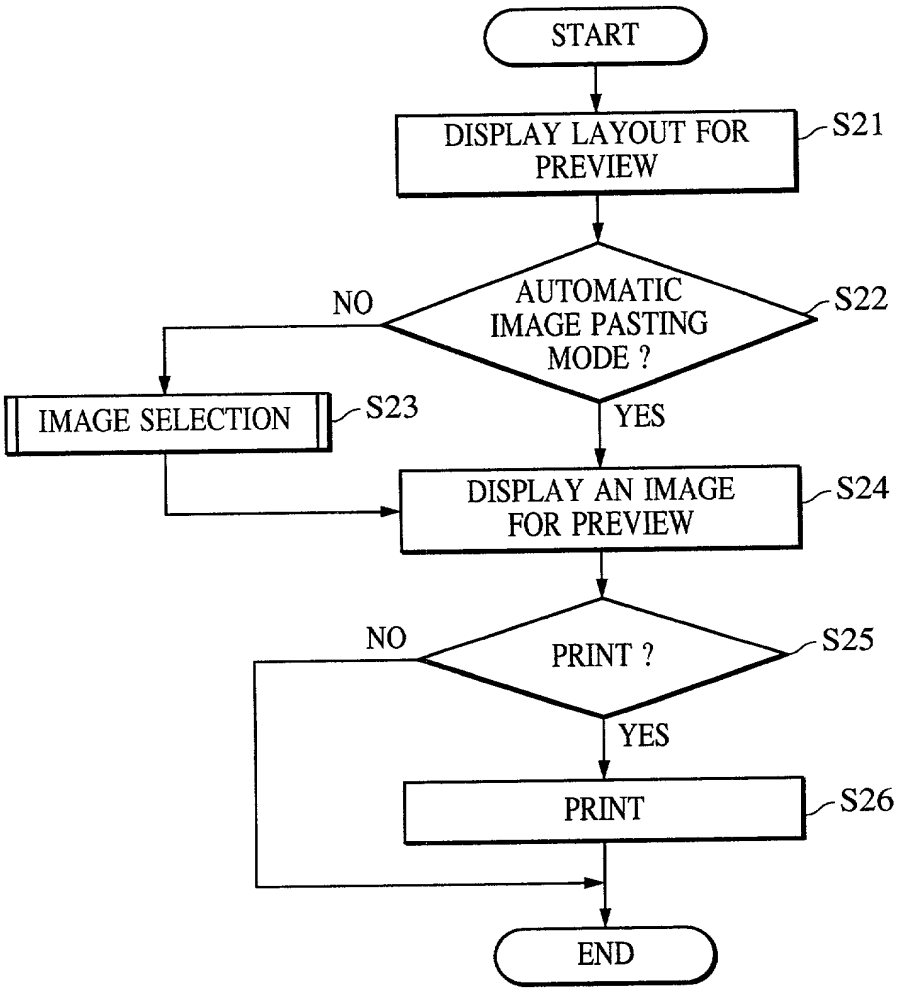
START
DISPLAY LAYOUT FOR PREVIEW
S21
AUTOMATIC IMAGE PASTING MODE ?
S22
NO
YES
IMAGE SELECTION
S23
DISPLAY AN IMAGE FOR PREVIEW
S24
PRINT ?
S25
NO
YES
PRINT
S26
END

FIG. 4

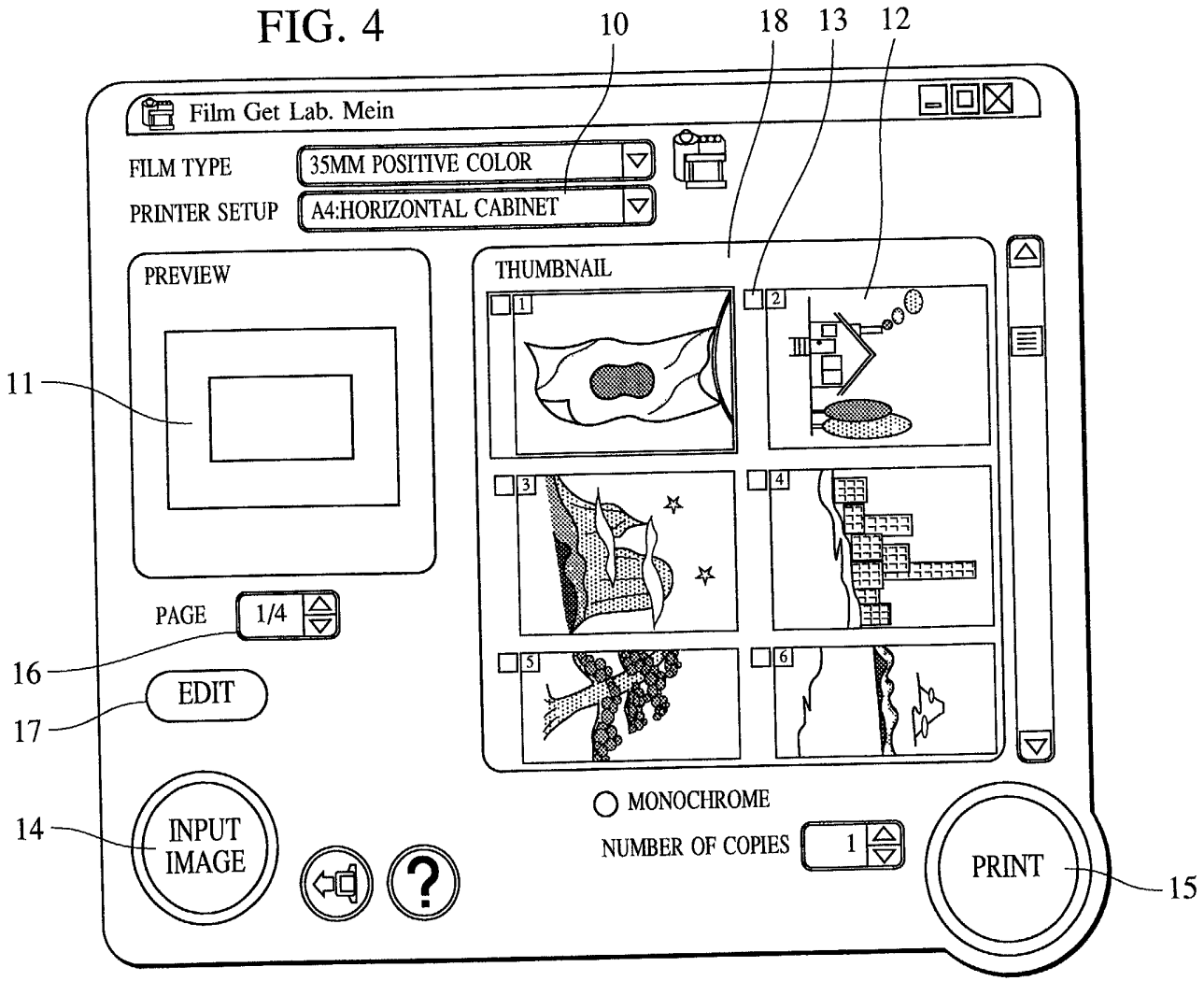
10
18
13
12
Film Get Lab. Mein
FILM TYPE
35MM POSITIVE COLOR
PRINTER SETUP
A4:HORIZONTAL CABINET
PREVIEW
THUMBNAIL
11
PAGE
1/4
16
EDIT
17
14
INPUT IMAGE
MONOCHROME
NUMBER OF COPIES
1
PRINT
15

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FIG. 5

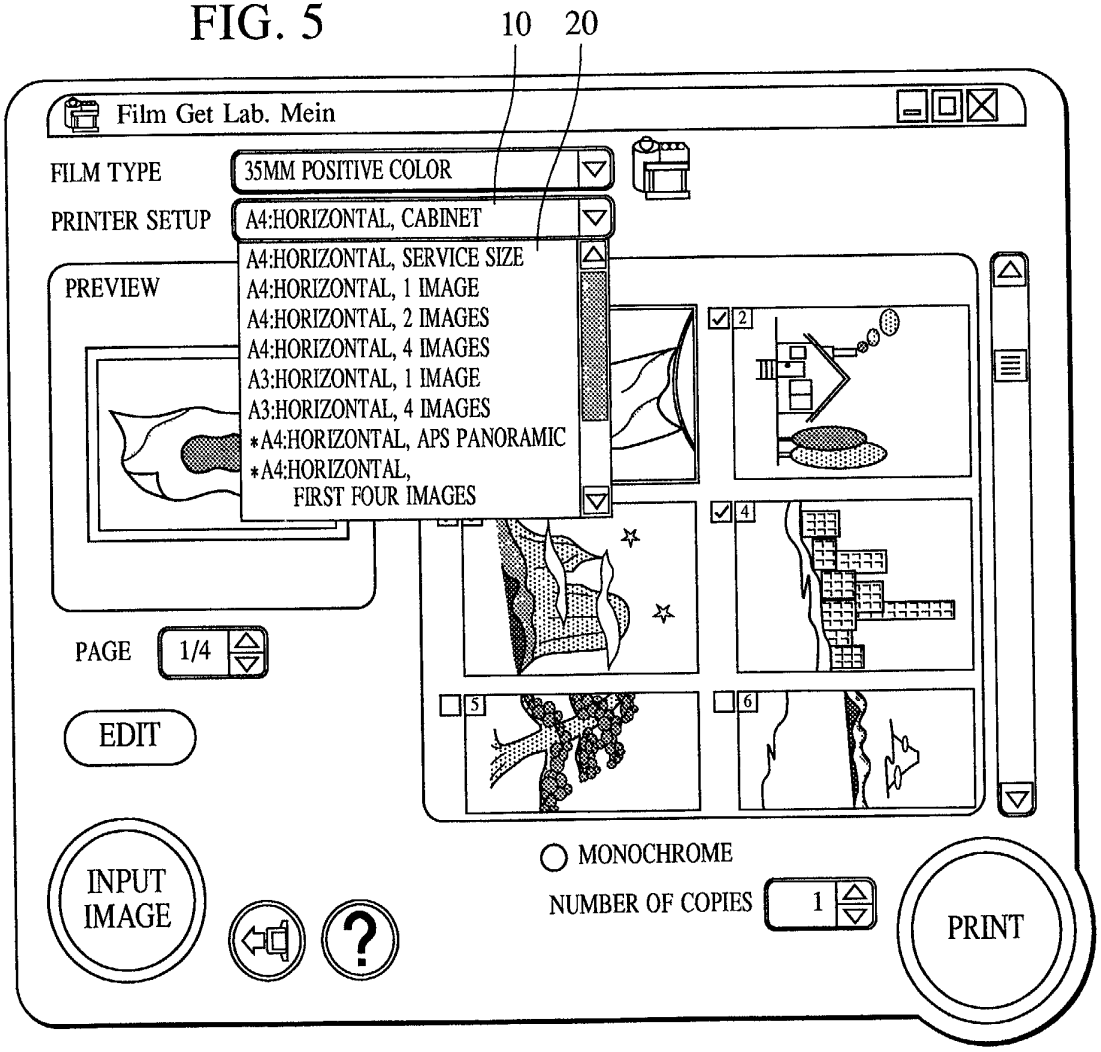

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FIG. 6

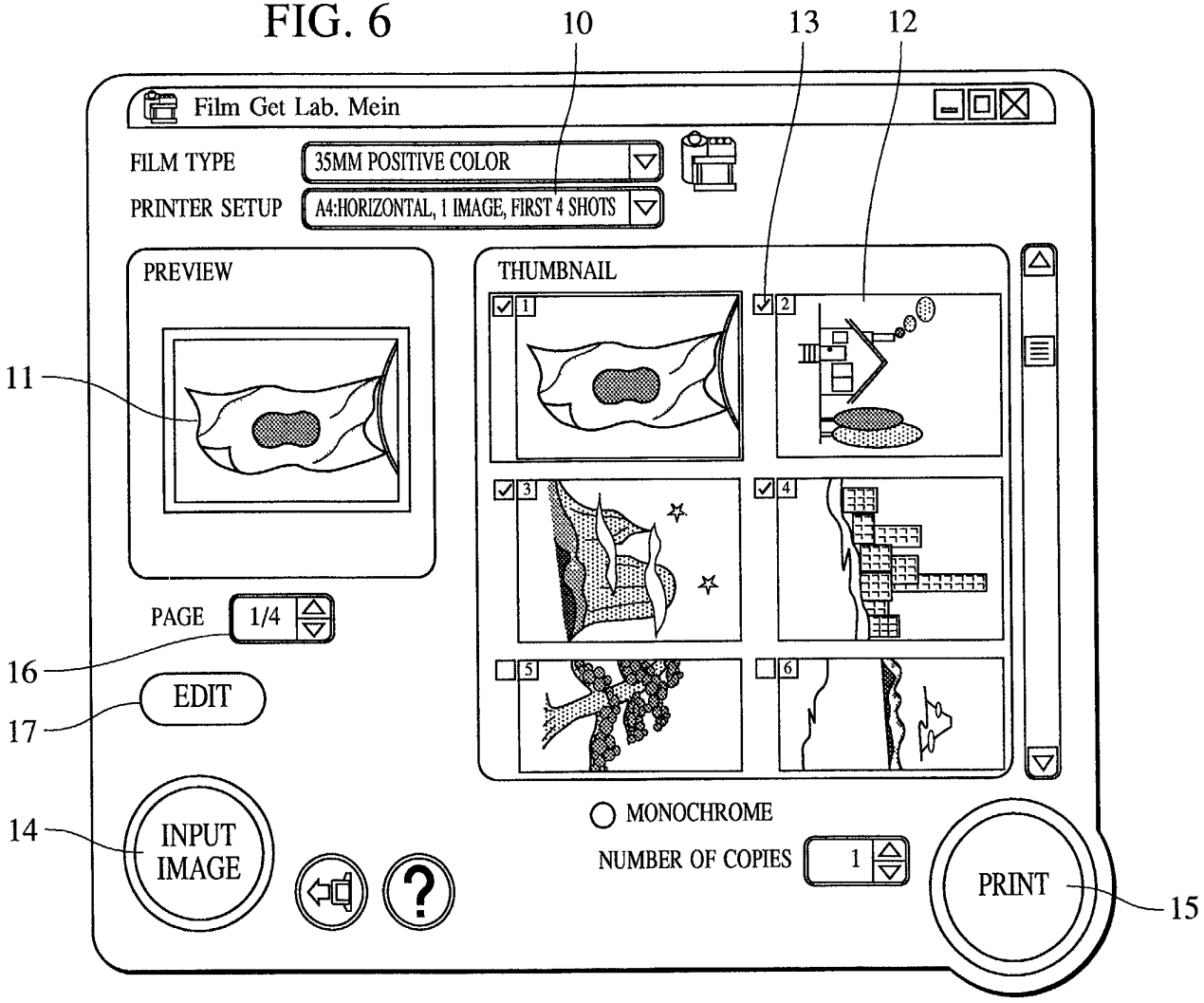

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FIG. 7

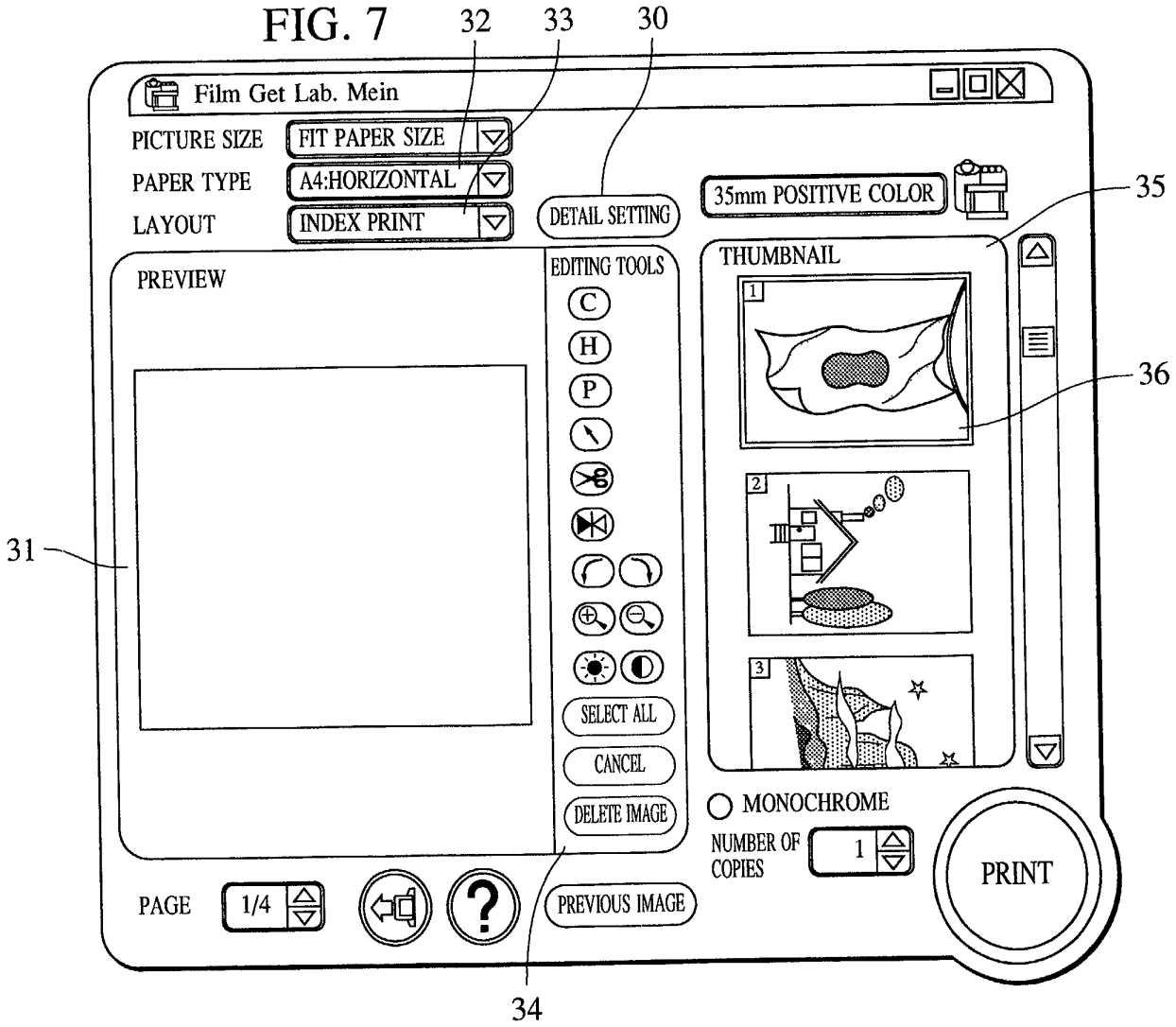


FIG. 8

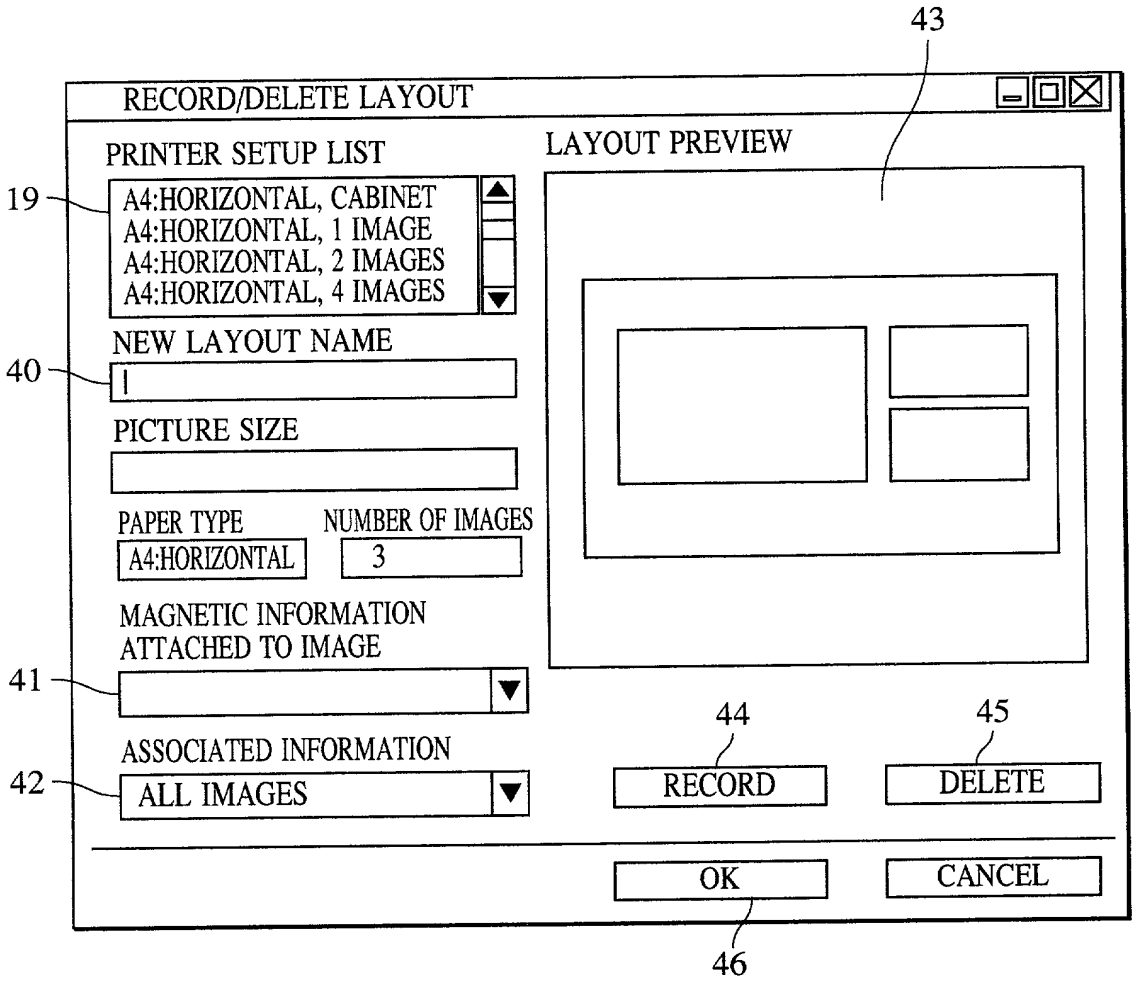

43
RECORD/DELETE LAYOUT
PRINTER SETUP LIST
LAYOUT PREVIEW
19
A4:HORIZONTAL, CABINET
A4:HORIZONTAL, 1 IMAGE
A4:HORIZONTAL, 2 IMAGES
A4:HORIZONTAL, 4 IMAGES
NEW LAYOUT NAME
40
PICTURE SIZE
PAPER TYPE
A4:HORIZONTAL
NUMBER OF IMAGES
3
MAGNETIC INFORMATION ATTACHED TO IMAGE
41
ASSOCIATED INFORMATION
42
ALL IMAGES
44
RECORD
45
DELETE
OK
CANCEL
46

FIG. 9

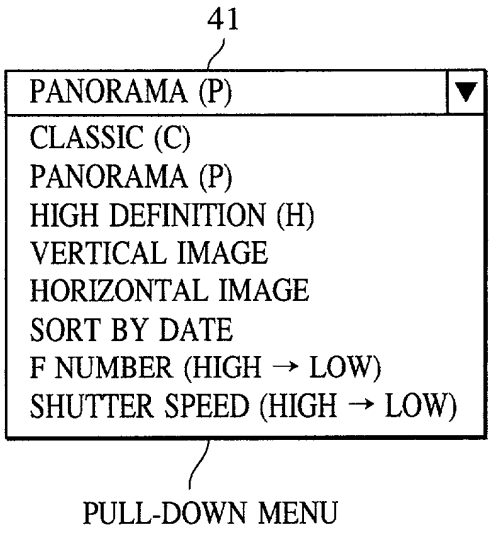
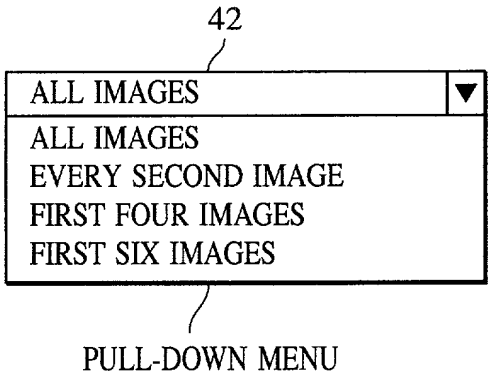


FIG. 10



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COMBINED DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

(page 1)

As a below named inventor, I hereby declare that.

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled METHOD AND APPARATUS FOR PROCESSING AN IMAGE, AND STORAGE MEDIUM

the specification of which ☒ is attached hereto. ☐ was filed on _____ as United States Application No. or PCT International Application No._____
and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56.

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or §365(b), of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT international application which designates at least one country other than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate, or PCT international application having a filing date before that of the application on which priority is claimed:

Country	Application No.	Filed (Day / Mo. / Yr.)	(Yes / No) Priority Claimed
Japan	058455/1999(Pat.)	05/March/1999	Yes

I hereby claim the benefit under 35 U.S.C. §120 of any United States application(s), or §365(c) of any PCT international application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. §112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Application No.	Filed (Day/Mo./Yr.)	Status (Patented, Pending, Abandoned)

I hereby appoint the practitioners associated with the firm and Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and direct that all correspondence be addressed to the address associated with that Customer Number:

FITZPATRICK, CELLA, HARPER & SCINTO
Customer Number: 05514

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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Inventor's signature Noriaki Miyamoto

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COMBINED DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION
(page 2)

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Full Name of Third Joint Inventor
Inventor's signature
Date Citizen/Subject of
Residence
Post Office Address

Full Name of Fourth Joint Inventor
Inventor's signature
Date Citizen/Subject of
Residence
Post Office Address

Full Name of Fifth Joint Inventor
Inventor's signature
Date Citizen/Subject of
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Inventor's signature
Date Citizen/Subject of
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Post Office Address

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